
UNIVERSITY OF ILLINOIS
AGRICULTURAL EXPERIMENT STATION

URBANA, ILLINOIS

WHY CREAM TESTS VARY

BY H. A. RUEHE, CHIEF IN DAIRY MANUFACTURES

The question is often raised by dairymen selling cream to creameries why it is that the test of their cream should vary from time to time, and frequently the cream buyer is unjustly accused of misreading tests. This causes dissatisfaction between the buyer and the producer, which often results in the producer unnecessarily changing his market.

It is the purpose of this circular to give in a concise form information which will explain the cause for some of these differences.

REGULATING PERCENTAGE OF FAT IN CREAM

All separators have some device, either a cream screw or skim-milk screw, which is designed for the purpose of regulating the richness of the cream that will be skimmed from the milk. Hence, it is possible to set the separator to skim a thin cream or a very rich cream. The cream screw is only one factor in determining what the test of the cream will be. The tests of cream from different skimmings will vary to quite an extent, even tho the screw is set the same. These variations are due to one or more of the conditions stated below.

Changing Speed of Bowl

The speed at which the separator bowl revolves is very important. Unless the bowl travels at the proper rate of speed it will not skim efficiently, and too much fat will be left in the skim milk. A decrease in the speed of the separator will also cause a decrease in the fat test of the cream, while overspeeding the bowl will cause an increase. The separator should be run at the speed designated by the manufacturer. In order that one may be certain that the separator is being operated at the correct speed, the revolutions of the crank should be timed by a reliable indicator or a watch.

Variation in the Test of the Milk

A variation in the percentage of fat in the milk of various milkings will also cause a variation in the cream test. With the

separator set the same, a low-testing milk will skim a thinner cream than a rich milk. The addition of fresh cows may change the test of the milk from the herd. A dry season, when the cows are on pasture, will cause a decrease in the milk flow and an increase in the test of the milk, while the reverse is true of a wet season.

Effect of the Temperature of the Milk

The temperature of the milk when being skimmed will affect the test of the cream. The degree to which it is affected varies with different makes of separators. Never attempt to skim milk that is not at least 75° Fahrenheit in temperature, for if it is lower in temperature the separator will not do efficient skimming. In cold weather it may be necessary to warm the milk in order to have it at the proper temperature.

Rate of Inflow

The rate at which milk is fed into the separator is also important. The float should always be used to regulate the amount of milk entering the bowl. The underfeeding of milk into the separator will cause an increase in the test of the cream.

Flushing the Bowl

The amount of skim milk or warm water that is used to flush the bowl and allowed to run into the cream can, will also affect the test of the cream.

Effect of an Unclean Separator

The separator bowl should be cleaned thoroly each time it is used. If this is not done properly, the passages for the skim milk and cream within the bowl may become clogged. This will cause inefficient skimming and is also likely to cause a variation in the test of the cream. Keep the separator bowl clean; this will not only make the separator do more effective skimming, but will result in the cream being of better quality.

The above conditions are likely to vary from time to time when separating milk; therefore a cream shipper might well expect to have a variation in his cream test. If there is a slight variation in the test of various deliveries of cream, do not condemn the cream buyer, for he may not be at fault. Examine your cream statement and see if there is a variation in the total pounds of butter fat which you are being paid for. If your cream tests a little lower than it did at the previous delivery you may have a few more pounds of cream to your credit; so that after all you may be getting paid for the same amount of butter fat.